

REMARKS

Reconsideration of this application is respectfully requested.

The Abstract, which was rejected by the Examiner because it exceeded 150 words, has been amended to reduce the word volume to below 150 words. Figure numbers previously included in the Abstract page have been deleted.

The specification has been amended to include subtitling as suggested by the Examiner.

The specification has also been amended at page 11 to provide a corrected reference number and a grammatical correction.

Prior to discussing the references relied on by the Examiner it may be helpful to briefly discuss some of the novel aspects of the invention.

Applicants have found that the operation of a return vending machine can be greatly simplified if the consumer places the container in the return vending machine with a selected end first, such as the bottom end.

To ensure that the container is inserted with the bottom end first applicants provide for a refusal by the return vending machine if the wrong end is inserted first. The refused container is directed back to the consumer for repositioning in the machine in the correct manner.

Since a container that is not placed in the return vending machine in the correct manner is refused the consumer receives no credit for the bottle unless the consumer reorients the bottle so that the bottom end is inserted first.

Thus applicants point out at page 1, paragraph [004] of the specification that it is important with regard to further handling of the container in the return vending machine to confirm that the container is inserted with the bottom end first, and if the orientation is incorrect, the bottle is returned to the consumer.

U.S. Patent 5,443,164 to Walsh et al shows a container sorting system wherein a plastic container is placed on a first conveyer 16 for passage through an inspection zone 18. The inspection zone is scanned by a camera to obtain data relating to reflectance, color, transparency, translucency and opaqueness. Based on the detection of container characteristics, the container is transported to a particular ejection station 60 and collection bin 70 that corresponds to the particular type of container. Walsh et al does not deal with the problem of detecting the orientation of the container, and does not deal with the problem of processing the container in one manner if it is in a selected orientation and the problem of processing the container in another manner if it is in another orientation.

U.S. Patent 4,691,231 to Fitzmorris et al shows a bottle inspection system for detecting dirt, foreign material on or in a glass bottle, proper filling of a full bottle and breakage or blemishes on the bottle. Fitzmorris states at column 12, lines 43-47 that in a typical bottling plant that refills bottles that are returned for deposit, approximately 80% of the bottles are within specification and are not scuffed, 15-20% are scuffed and acceptable, and that the remainder are rejectable. The Fitzmorris system is thus designed to operate in a bottle refilling plant.

The Fitzmorris system inspects bottles that are moving on a conveyor belt and are in vertical orientation as shown in Figs. 1 and 7. If a bottle arrives in a horizontal orientation as shown in Fig. 8, a signal alert is generated and the bottle is manually restored to a vertical orientation (column 14, lines 15-29). There is no showing or suggestion in Fitzmorris of any attempt to deal with the problem of bottle orientation when the bottle is lying down on its side. Thus whether the bottle is lying down on its side, as shown in Fig. 8, and is bottom end first or mouth end first the same signal alert will be generated to ensure that the bottle is restored to a vertical orientation.

It is thus submitted that whether Walsh et al is considered individually or in combination with Fitzmorris there is no teaching of any techniques which would enable a person skilled in the art to determine whether a bottle is inserted into a return vending machine bottom end first or mouth end first.

With regard to the claims, claim 1 requires;

“A method of handling an empty beverage container...having an axis extending between...a bottom end of the container and...a mouth region of the container...the method comprises...detecting by video camera...the container...in a lying posture...determining whether the container is moved into the detection zone with its first end first or with its second end first...transporting the container to said outlet if it is delivered into the detection zone with its first end first, or causing the container to be returned to the inlet if it is delivered into the detection zone with its second end first.”

Applicants thus claim a method that differs from the systems and methods disclosed in Walsh et al and Fitzmorris. Furthermore Walsh et al and Fitzmorris deal with problems unrelated to those dealt with by applicants. It is thus submitted that claim 1 is allowable over Walsh et al and Fitzmorris and any of the other references of record whether considered individually or in combination with Walsh et al and Fitzmorris.

Claims 2-5 and 11 which depend on claim 1 are likewise submitted as allowable for the reasons supporting allowance of claim 1 as well as the distinctions defined therein.

For example, claim 2 requires the further step of issuing a prompt to the return vending machine user to remove the container when returned and to reinsert it in the inlet with its first end first.

Claim 3 requires that the most suitable video image be determined by a video camera for recognition and identification of the container.

Claim 4 requires that there be an observation of any longitudinal markings in the video image of the body container and that a signal be emitted to communicate that the container is fully or partly with liquid or another substance for a possible return of the container to the user for emptying prior to reinsertion into the machine.

Claim 5 requires that the manner of insertion be related to the orientation of the container.

Claim 11 requires that the container be transported to the outlet with its first end first.

It is thus submitted that claims 2-5 and 11 are allowable and allowance thereof is respectfully requested.

Independent claim 6 requires a return vending machine that includes,

“...a video analyzer for video image analysis of a container...a video camera...a calculator for determining when a container moves...first end first...or...second end first...a control component capable of causing the container either to be returned to a device inlet...with its second end first, means...provided to cause a device user to reinsert the container with its first end first, or if it is...with first end first to feed it past the detection zone...to a discharge station.”

Claim 6 thus requires a system for detecting whether a bottle has a predesired orientation and if not then the control component causes return of the bottle to the user to reinsert with the correct orientation. It is submitted that neither Walsh et al or Fitzmorris whether considered individually or collectively show or suggest a system as claimed in claim 6. It is thus submitted that claim 6 is allowable over Walsh et al and Fitzmorris collectively or in combination with any of the other references of record. Allowance of claim 6 is thus respectfully requested.

Claims 7-10 which depend on claim 6 are likewise submitted as allowable for the reasons supporting allowance of claim 6 as well as the distinctions defined therein.

For example, claim 7 requires a prompt provided by a signaling means for signaling the need of a user to return the container so that it is inserted bottom end first.

Claim 8 requires a position detector to determine the position and movement of the container in a viewing region of the video camera on the basis of continuous detection of position and movement.

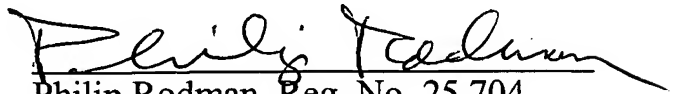
Claim 9 requires a circuit in the video analyzer for determining and identifying the best video image of the container.

Claim 10 requires an observation circuit in the analyzer to observe any longitudinal markings on the video image of the bottle and to emit a signal when the markings indicate that the bottle contains liquid or another substance.

It is thus submitted that claims 7-10 are allowable and allowance thereof is respectfully requested.

In view of the foregoing remarks and amendments it is submitted that this application is in condition for allowance and allowance thereof is respectfully requested.

Respectfully submitted,


Philip Rodman, Reg. No. 25,704
Attorney for Applicant

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RODMAN & RODMAN
7 South Broadway
White Plains, New York 10601

Telephone: (914) 949-7210
Facsimile: (914) 993-0668
972-29